



Preliminary digital map of cryptocrystalline occurrences in northern Nevada

by Lorre A. Moyer¹

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This report is preliminary and has not been review for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government. The digital database is not meant to be used or displayed at any scale larger than 1:750,000 (e.g., 1:500,000 or 1:250,000).

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¹ U.S. Geological Survey, Reno, NV 89557

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Introduction

The purpose was to identify potential cryptocrystalline material sources for tools used by indigenous people of the northern Nevada portion of the Great Basin. Cryptocrystalline occurrence data combed from the U.S. Geological Survey's Mineral Resources Data System (MRDS, 1995) were combined with sites described in Nevada rockhound guides and entered into a geographic information system (GIS). The map area encompasses northern Nevada (fig.1). This open-file report describes the methods used to convert cryptocrystalline occurrence data into a digital format, documents the file structures, and explains how to download the digital files from the U.S. Geological Survey's World Wide Web site. Uses of the spatial dataset include, but are not limited to, natural and cultural resource management, interdisciplinary activities, recreational rockhounding, and gold exploration. It is important to note that the accuracy of the spatial data varies widely, and for some purposes, field checks are advised.

I wish to thank Gary Raines, Katherine Connors, and Alan Wallace of the U.S. Geological Survey for their part in initiating this project. Assistance from Ron Hess of the Nevada Bureau of Mines and Geology, and Steve Peters of the U.S. Geological Survey was also appreciated.

Background

The distribution of tool source materials is significant to archaeological research, as it has influenced the patterning of human settlement, the nature of exchange relations, and extractive activities of native people. Archaeologists routinely rely on tools such as pottery and projectile points for dating techniques. The nomadic lifestyle of the Great Basin people did not lend itself to cumbersome items that were difficult to transport; therefore, basketry rather than pottery was used for food storage and cooking (Grayson, 1993). As a result, the major dating device or time marker for the Great Basin archaeological sites has been the projectile point (Hester and Heizer, 1978).

The term "projectile point" includes stone-age implements such as arrowheads, darts, javelin points, spearheads, knives, fish gorges, drills, scrapers, awls, graters, and bunts that were used by indigenous northern Nevadans to forage for food (Strong, 1969). Food was the main focus of life, and tribes were named for the primary type of plant or animal that they consumed (Johnson, 1975). Small family groups commonly foraged areas approximately 20 to 30 mi in radius, utilizing tool material sources close to the areas they inhabited (Steward and Wheeler-Voegelin, 1974). Depending upon regional variability of source materials, some groups would make longer trips to gather material of particularly good quality. Factors such as size, shape, frequency of fracture, and granularity were considered in selecting the most favorable materials. Cryptocrystalline materials such as chert, obsidian, and flint (rare in the West) were best (Arnold, 1992). These materials had no grain so that fracturing occurred in directions suiting the purpose of the craftsman, who created tools by pressure flaking (Strong, 1969).



Figure 1. Index map showing the geographic extent of the preliminary map of northern Nevada cryptocrystalline occurrences (black fill) with respect to the western U.S.

Data Sources, Processing, and Accuracy

Sources used to create the digital map include the U.S. Geological Survey's Mineral Resources Data System (MRDS, 1995), and four Nevada rockhound guides (Johnson, 1989; Klein, 1983; Mitchell, 1991; and Murphy, 1975). The rockhound guides contain written descriptions, sketches, or maps (often lacking detail) of primarily non-metallic gem and mineral locations. The main focus of the MRDS database has been metallic occurrences; therefore, MRDS compliments the rockhound sites.

MRDS is an international mineral resource database maintained by the U.S. Geological Survey. The database contains over 111,000 mineral occurrence records in a customized program called *ROCS* (Resource Oriented Computer System) that requires the commercial database manager *4th Dimension*, version 2.2.3, for the Macintosh computer. The MRDS database is not comprehensive and varies widely in coverage, the Western U. S. having better coverage than other areas. This database was compiled from many sources including publications, digital files, assessment studies, commodity specialists, geologists, and contractors. Accordingly, the records vary widely in the type, quality, and accuracy of information due to the original data structure, output formats, transfer process, or type and amount of information from the original sources.

MRDS (1995) was searched with *ROCS* using various criteria and different search strategies designed to capture northern Nevada cryptocrystalline occurrences. *ROCS* search statements include the MRDS field name followed by "contains" and the first few letters of the search word followed by an @ sign. The @ sign captures attributes that begin with the indicated spelling, for example, opal@ captures "opal" and "opalized" or vol@ captures "volcanic material". Many searches were tried and some were redundant or retrieved no new cryptocrystalline occurrences. The following is a list of the most successful cryptocrystalline search statements for the *ROCS* program (MRDS field shown in boldface):

NonOre Minerals contains opal@

NonOre Minerals contains chalcedon@

NonOre Minerals contains chert@

NonOre Minerals contains jasper@

Ore Minerals contains opal@

Ore Minerals contains chalcedon@

Ore Minerals contains vol@

CommodPreSort contains gem@

CommodPreSort contains sil@

Host Rock Type contains opal@

Host Rock Type contains chert@

Host Rock Type contains sil@

DepDescComments contains crypto@

GeologyComments contains crypto@
GeologyComments contains vitr@
USGSModel first contains hot spring@

A total of 128 unique Nevada cryptocrystalline MRDS records were captured and downloaded into a dBase file. A point coverage, **mrds_crypto**, was created from these records and projected to UTM Zone 11 using ARC/INFO 7.1. The point coverage was then converted to an ArcView 3.0 shapefile as a MRDS point theme, **mrds.shp**. MRDS fields were maintained in the ArcView point theme table, **mrds.dbf**, and a TYPE field describing the cryptocrystalline material was added. The TYPE field was used to color code the points using the ArcView legend editor.

The rockhound sites were descriptive and not based in a coordinate system; therefore, the ArcView distance-measuring tool was used to locate the sites in creating the ArcView 3.0 polygon theme, **rkhd.shp**. Eighty-two cryptocrystalline sites were spatially referenced using Nevada 1:100,000 scale digital raster graphic (DRG) maps in UTM projection as background images ([Nevada Bureau of Mines and Geology, 1996](#)). Sites were located by measuring described distances and directions along roads and marking with polygon shapes. The polygon size reflects the general area of distribution or scattering of the cryptocrystalline material. The polygon outlines are smooth showing the lack of point-to-point location accuracy of the site descriptions. A LOCATION field numerically codes location accuracy in the polygon theme table, **rkhd.dbf**. The polygon TYPE field, as in the MRDS point theme table, categorizes the cryptocrystalline material for each rockhound site, and is used with the ArcView legend editor to color code the polygons (Appendix).

The MRDS point ([fig.2](#)) and rockhound polygon ([fig.3](#)) themes were combined ([fig.4](#)) in a representation of the preliminary map of cryptocrystalline occurrences of northern Nevada. ARC/INFO coverages of Nevada roads and counties were used to design the ArcView layout of the preliminary map of northern Nevada cryptocrystalline occurrences at 1:750,000 scale in UTM Zone 11.

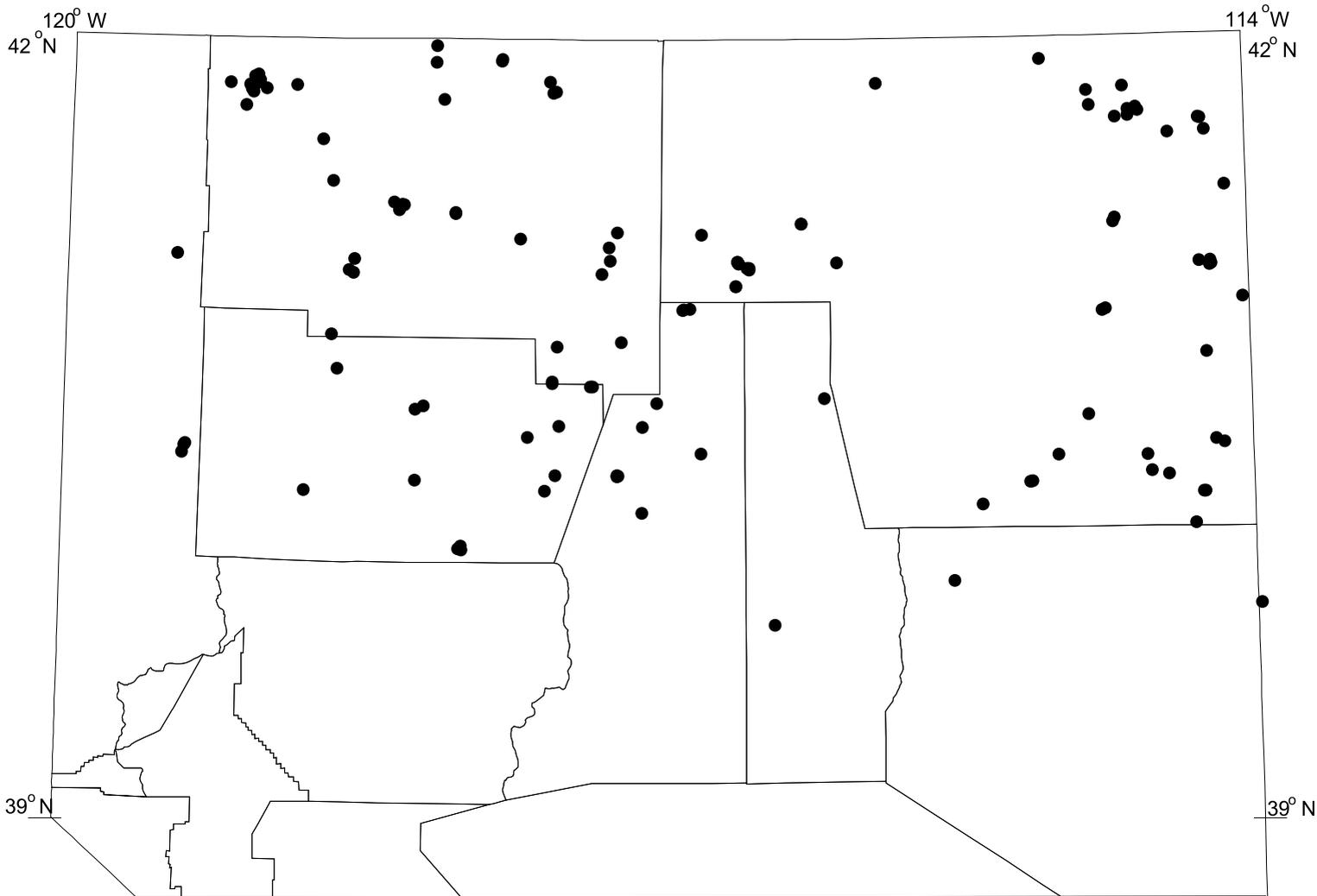


Figure 2. Point distribution of cryptocrystalline occurrences in northern Nevada derived from the Mineral Resources Data System (MRDS, 1995). (Lines represent county boundaries labeled in fig. 4.)

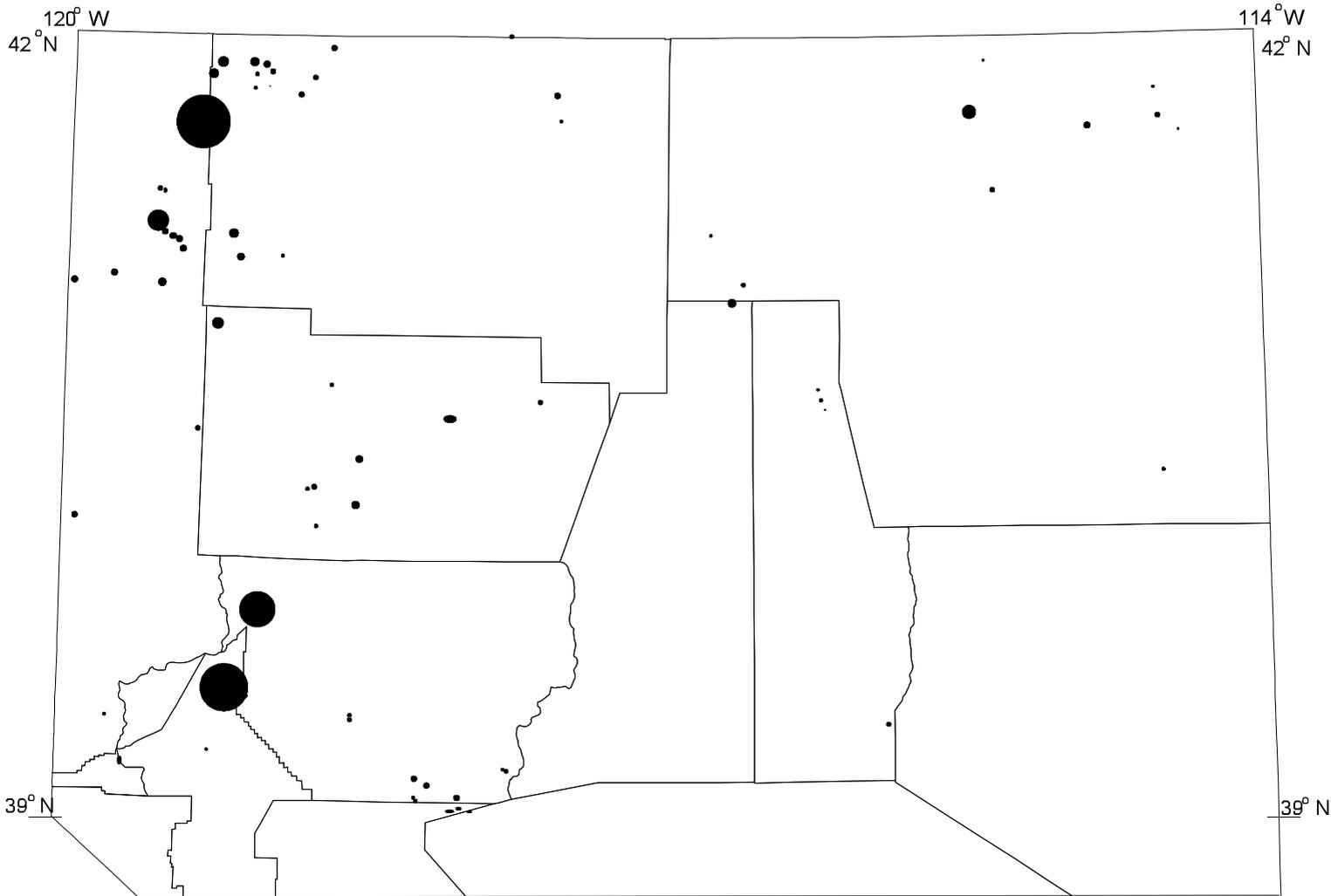


Figure 3. Polygon distribution of cryptocrystalline occurrences in northern Nevada derived from rockhound guides (Johnson, 1989; Klein, 1983; Mitchell, 1991; and Murphy, 1975). (Lines represent county boundaries labeled in fig. 4.)

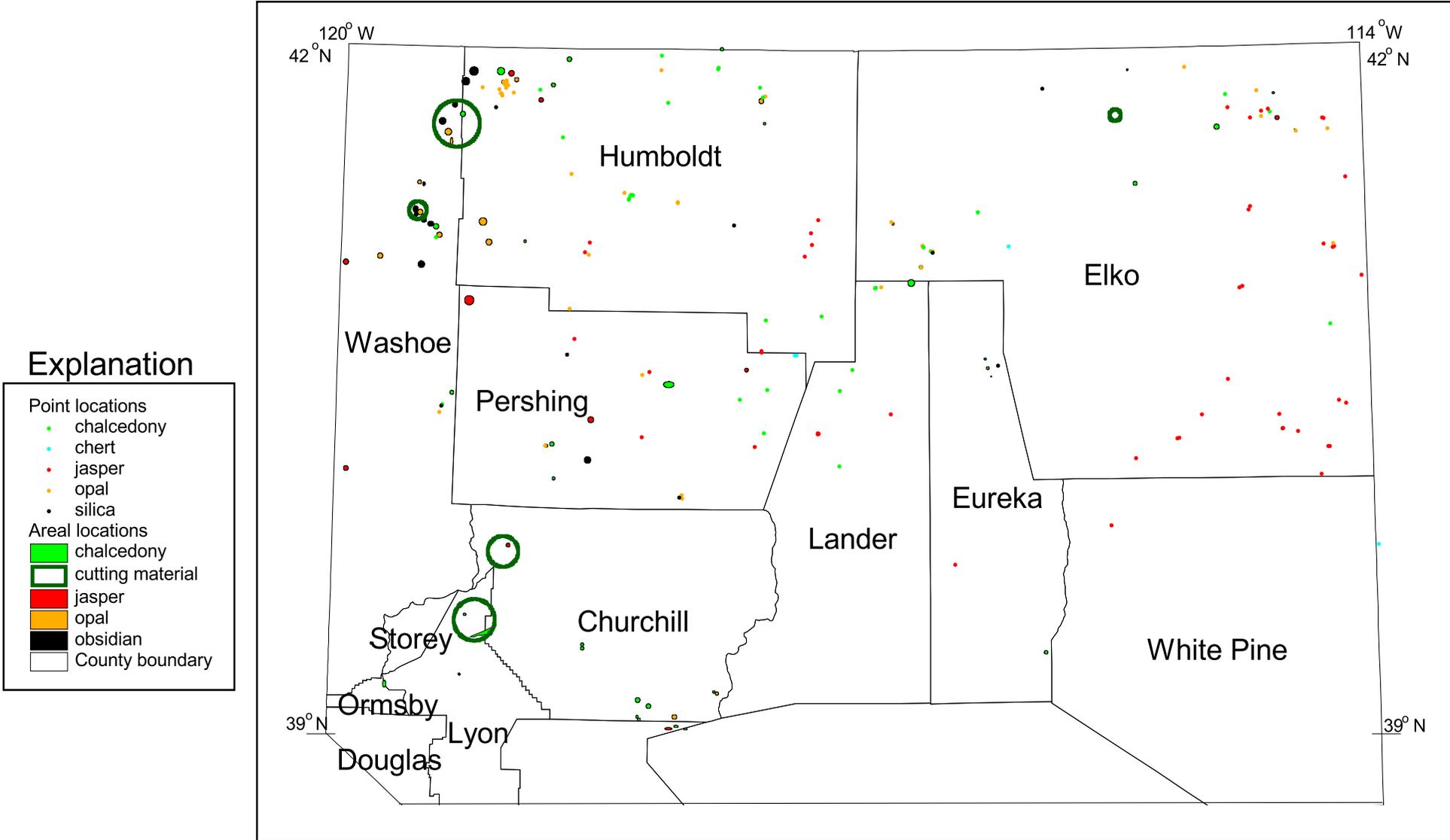


Figure 4. Preliminary map of cryptocrystalline occurrences in northern Nevada (counties are labeled).

GIS Documentation

This digital cryptocrystalline source map of northern Nevada at 1:750,000 scale is based on a point theme table, **mrds.dbf** ; and polygon theme table, **rkhnd.dbf**, that relates to the source table, **rkhnd1.dbf** .

Point Features

The significant MRDS fields and the added TYPE field in the ArcView point theme table, **mrds.dbf**, are briefly described below. Additional information on the MRDS fields can be found in the metadata.

Point Theme Table: mrds.dbf			
Field Name	Field Type	Field Length	Attribute Description
Record_no	character	7	Record number in MRDS dataset
Site	character	50	Most recent site name
Synonym	character	50	Other names by which the site is known
District	character	50	Mining district/area/subdistrict
Quad	character	25	Quadrangle name
Latitude	character	9	Latitude
Longitude	character	10	Longitude
Commods	character	49	Commodities of economic interest present
Owner	character	50	Present/last owner
Operator	character	50	Present/last operator
Dep_type	character	50	Deposit types
Dep_size	character	1	Deposit size: small, medium, large
Hr_type	character	50	Host rock type
Hr_age	character	15	Host rock age
lg_rk_type	character	50	Igneous rock type
lg_rk_age	character	15	Igneous rock age
Alteration	character	50	Alteration type
Ore_mins	character	254	Ore minerals
Nonore_min	character	203	Nonore minerals
Comments	character	254	General Comments
Model_name	character	40	USGS Model name
Model_num	character	5	USGS Model number
Type	character	16	Cryptocrystalline type: chalcedony, chert, jasper, opal, silica

Areal Features

The rockhound-site fields in the ArcView polygon theme table, **rkhnd.dbf**, and related source table, **rkhnd1.dbf**, (linked by a numerically coded REFERENCE field) are described below. For information on the TYPE, LOCATION, and SOURCE codes refer to the Appendix.

Polygon Theme Table: rkhnd.dbf			
Field Name	Field Type	Field Length	Attribute Description
Type	character	16	cryptocrystalline type: chalcedony, cutting material, jasper, obsidian, opal
Subtype	character	16	cryptocrystalline subtype or secondary occurrence: agate, Apache Tears, onyx, chalcedony, chert, cinnabar, fire opal, jasper, obsidian, opal, opalite, petrified wood, precious opal, wood (petrified wood)
Location	number	2	Location accuracy code
Reference	number	2	Source code
Site_name	character	30	Site or locality name
Quadrangle	character	30	1:100,000 scale quadrangle

Source Table: rkhnd1.dbf			
Field Name	Field Type	Field Length	Attribute Description
Reference	number	3	Source code
Source	character	175	Rockhound guide reference

Obtaining Digital Data

The digital files used to create the cryptocrystalline map are available in ArcView shapefile format with associated data files (refer to Appendix). The map is available as an encapsulated postscript (EPS) file. These data and map images are maintained in a Universal Transverse Mercator (UTM) map projection:

Projection: UTM
Zone: 11
Units: meters

To obtain copies of the digital data, do one of the following:

1. Download the digital files from the USGS public access World Wide Web on the internet:
URL = <http://geopubs.wr.usgs.gov/open-file/of99-523>.

or

2. Anonymous FTP from **geopubs.wr.usgs.gov**, in the directory **pub/open-file/ofr99-523**

The Internet sites contain the digital northern Nevada cryptocrystalline map, 1:750,000 scale, ArcView shapefiles, and associated data files. To manipulate this data in a geographic information system (GIS), you must have a GIS that is capable of reading ArcView 3.0 shapefiles.

Obtaining Paper Maps

Paper copies of the digital cryptocrystalline map are not available from the USGS. However, with access to the Internet and to a large-format color plotter, a 1:750,000 scale paper copy of the map can be made, as follows:

1. Download the digital version of the complete map **nnvcrypt.eps** from the USGS public access World Wide Web site on the Internet using the
URL = <http://geopubs.wr.usgs.gov/open-file/of99-523>.

or

2. Anonymous FTP from: **geopubs.wr.usgs.gov** in the directory: **pub/open-file/ofr99-523**
3. Any large-format color plotter that can interpret Postscript can plot this file. The finished product is about 34 inches (height) by 44 inches (width).

Paper copies of the map can also be created by obtaining one of the versions of the digital files as described above (in "Obtaining Digital Data"), and then creating a plot file in a GIS.

References

- Arnold, J.E., ed., 1992, Stone tool procurement, production, and distribution in California prehistory: Perspectives in California Archaeology, v. 2, Institute of Archaeology, University of California, Los Angeles, 156 p.
- Grayson, D.K., 1993, The desert's past: a natural prehistory of the Great Basin: Washington, D.C., Smithsonian Institute Press, 356 p.
- Hester, T.R., and Heizer, R.F., 1978, Review and discussion of Great Basin projectile points: forms and chronology: Socorro, N.M., Ballena Press, 43 p.
- Johnson, E.C., 1975, Walker River Paiutes: a tribal history: Schurz, Nev., Walker River Paiute Tribe, 201 p.
- Johnson, R.N., 1989, Nevada-Utah gem atlas (3d ed.): Susanville, Calif., Cy Johnson & Son, 48 p.
- Klein, James, 1983, Where to find gold and gems in Nevada: Pico Rivera, Calif., Gem Guides Book Co., 110 p.
- Mitchell, J.R., 1991, Gem trails of Nevada: Baldwin Park, Calif., Gem Guides Book Co., 119 p.
- Mineral Resources Data System (MRDS), 1995, U.S. Geological Survey, (computer database).
- Murphy, J.B., 1975, Rockhound's map of Nevada: Nevada Bureau of Mines and Geology, Special Publication 1, scale 1:1,000,000.
- Nevada Bureau of Mines and Geology, 1996, Nevada 1:100,000-scale digital raster graphic (DRG) maps: Nevada Bureau of Mines and Geology, CD-ROM.
- Steward, J.H., and Wheeler-Voegelin, Erminie, 1974, The Northern Paiute Indians: Paiute Indians, III, American Indian ethnohistory: California and Basin-Plateau Indians, New York, Garland Publishing, Inc., 328 p.
- Strong, E M., 1969, Stone age in the Great Basin: Portland, Ore., Binford and Mort, Publishers, 274 p.

Appendix A – List of Digital Files in the cryptocrystalline GIS

ArcView, ARC/INFO, and Associated Files

MRDS shapefiles: mrds.shp, mrds.dbf, mrds.shx, mrds.avl

MRDS ARC/INFO coverage: mrds_crypto

Rockhound shapefiles: rkhnd.shp, rkhnd.dbf, rkhnd.shx, rkhnd.avl, rkhnd.aih, rkhnd.ain

Rockhound source table: rkhnd1.dbf, rkhnd1.aih, rkhnd1.ain

Rockhound ARC/INFO coverage: rkhnd_crypto

Associated files: mrds_crypto.e00, rkhnd_crypto.e00

Appendix B – Attribute codes used in the cryptocrystalline GIS

Attribute Codes for Fields

TYPE (occurs in mrds.dbf and rkhnd.dbf)

Chalcedony = green

Chert = blue

Jasper = red

Opal = gold

Obsidian, silica = black

Cutting materials = green outline

LOCATION (occurs in rkhnd.dbf)

reasonably accurate = 1

general area = 2

vague = 3

inaccurate = 4

SOURCE (occurs in rkhnd.dbf)

Rockhound's Map of Nevada (Murphy, 1975) = 1

Gem Trails of Nevada (Mitchell, 1991) = 2

Nevad-Utah Gem Atlas (Johnson, 1989) = 3

Where to find Gold and Gems in Nevada (Klein, 1983) = 4

Metadata

Appendix C – Metadata for MRDS GIS (mrds.met)

Identification_Information:

Citation:

Citation_Information:

Originator: Lorre A. Moyer

Publication_Date: 1999

Title: mrds (ArcView shapefile), mrds_crypto (ArcInfo point coverage)

Geospatial_Data_Presentation_Form: vector digital data

Series_Information:

Series_Name: Open-File Report

Issue_Identification: 99-523

Publication_Information:

Publication_Place: Spokane, WA

Publisher: U.S. Geological Survey

Online_Linkage:

<http://geopubs.wr.usgs.gov/openfile/of99-523/>

<ftp://geopubs.wr.usgs.gov/pub/openfile/of99-523>

Larger_Work_Citation:

Citation_Information:

Title: Moyer, Lorre A., 1999, Preliminary digital map of cryptocrystalline occurrences in northern Nevada: U. S. Geological Survey Open-File Report 99-523, 38p.

Description:

Abstract: A point coverage of northern Nevada cryptocrystalline occurrences extracted from the U.S. Geological Survey's Minerals Resource Data System (MRDS) and converted into an ArcView shapefile.

Purpose: The MRDS point theme was used with a polygon theme shapefile derived from Nevada rockhound guides to create a preliminary map of northern Nevada cryptocrystalline occurrences. The original intent was to identify potential sources of raw materials for tools used by indigenous people of northern Nevada. The dataset was created to assist governmental agencies and others in making resource management decisions through the use of geographic information systems (GIS). Uses of the spatial data set include, but are not limited to natural, and cultural resource management, interdisciplinary activities, recreational rockhounding, and gold exploration.

Supplemental_Information: The primary focus of this data was potential raw material sites for tools made by native northern Nevadans. Archaeologists routinely rely on pottery and projectile points for dating techniques. Since basketry was used most in the nomadic lifestyle of the native northern Nevadans, the major dating device for the Great Basin archaeological sites has been the projectile point. Preliminary investigation of the types of raw materials used for tool making by indigenous people of Northern Nevada led to decisions regarding the kind of occurrences considered to be cryptocrystalline for this data set.

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1995

Time_of_Day: Unknown

Currentness_Reference: MRDS Version

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None planned

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -179.4275

East_Bounding_Coordinate: -173.89616
North_Bounding_Coordinate: 41.95434
South_Bounding_Coordinate: 39.71288

Keywords:

Theme:

Theme_Keyword_Thesaurus: none
Theme_Keyword: chalcedony
Theme_Keyword: opal
Theme_Keyword: jasper
Theme_Keyword: chert
Theme_Keyword: silica

Place:

Place_Keyword_Thesaurus: none
Place_Keyword: Northern Nevada

Access_Constraints: None

Use_Constraints: For use at 1:750,000 scale. Spatial data accuracy varies greatly due to the wide variety of data sources used in creating the MRDS database. For some purposes a field check may be advisable.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Lorre A. Moyer
Contact_Organization: U.S. Geological Survey, Reno Field Office

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing and physical address
Address: USGS C/O Mackay School of Mines MS 176, University of Nevada
City: Reno
State_or_Province: Nevada
Postal_Code: 89557
Country: USA

Contact_Voice_Telephone: 775-784-5552

Contact_Facsimile_Telephone: 775-784-5079

Contact_Electronic_Mail_Address: lorre@usgs.gov

Hours_of_Service: 800-1600 PT

Data_Set_Credit: Katherine Connors and Gary Raines of the USGS, and Ron Hess of the Nevada Bureau of Mines and Geology assisted in the direction and creation of this data set.

Security_Information:

Security_Classification_System: none

Security_Classification: Unclassified

Security_Handling_Description: none

Native_Data_Set_Environment: Arcview 3.1 shapefile format

Cross_Reference:

Citation_Information:

Originator: Moyer, L.A.

Publication_Date: 1999

Title: Preliminary digital map of cryptocrystalline occurrences in Northern Nevada

Geospatial_Data_Presentation_Form: map

Series_Information:

Series_Name: OF

Issue_Identification: 99-523

Publication_Information:

Publication_Place: Spokane, WA

Publisher: U.S. Geological Survey

Online_Linkage:

<http://geopubs.wr.usgs.gov/openfile/of99-523/index.html>

<ftp://geopubs.wr.usgs.gov/pub/openfile/of99-523>

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report: MRDS data came from many different sources and there has been no consistent program to verify the accuracy of the information. The original MRDS database field ACC was intended to indicate the positional accuracy of each record, and was entered by the person who created or updated the record.

Logical_Consistency_Report: Point topology. These data are believed to be logically consistent, although no formal tests were performed. Because of multiple sources, data characteristics may not be consistent.

Completeness_Report: The area of interest was within the northern Nevada state boundary and bounded in the south by 39 degrees north latitude. The cryptocrystalline materials that comprise the data set are chalcedony, opal, jasper, chert, and silica.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report: Positional accuracy is variable among the MRDS records in the database because the data came from multiple sources and no consistent program has been implemented to verify the accuracy of the positional information. The database field ACC contains an indicator of the accuracy of the information in the record, which generally focuses on the positional accuracy but may in some cases refer to attributes as well.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: U.S. Geological Survey database

Publication_Date: 1995

Title: Minerals Resources Data System (MRDS)

Publication_Information:

Publication_Place: Reston, VA

Publisher: U.S. Geological Survey

Type_of_Source_Media: digital database

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1995

Source_Currentness_Reference: 1995

Source_Citation_Abbreviation: MRDS, 1995

Source_Contribution: Cryptocrystalline site locations

Process_Step:

Process_Description: Several search strategies were designed to capture records from the MRDS database that represented cryptocrystalline occurrences. The following searches of MRDS fields were successful using the MRDS subsearch editor: NonOre Minerals CONTAINS opal@, chalcedon@, chert, jasper@ ; Ore Minerals CONTAINS opal@, chalcedon@, Vol@; CommodPresSort CONTAINS gem@, sil@; Host Rock Type CONTAINS opal@, chert@, sil@; DepDescComments CONTAINS crypto@; GeologyComments CONTAINS crypto@, vitr@; USGSModelfirst CONTAINS hot spring@. Obsidian searches of MRDS provided no additional records. The MRDS records meeting the search criteria (128) were converted to DBF files, brought into an ARC/INFO point coverage, projected to UTM Zone 11, and converted to an ArcView shapefile.

Source_Used_Citation_Abbreviation: MRDS, 1995

Process_Date: 1999

Source_Produced_Citation_Abbreviation: Moyer,1999

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Lorre A. Moyer
 Contact_Organization: U.S. Geological Survey, Reno Field Office
 Contact_Position: Geologist
 Contact_Address:
 Address_Type: mailing and physical address
 Address: USGS C/O Mackay School of Mines MS 176, University of Nevada
 City: Reno
 State_or_Province: Nevada
 Postal_Code: 89557
 Country: USA
 Contact_Voice_Telephone: 775-784-5552
 Contact_Facsimile_Telephone: 775-784-5079
 Contact_Electronic_Mail_Address: lorre@usgs.gov
 Hours_of_Service: 800-1600 PT

Spatial_Data_Organization_Information:
 Direct_Spatial_Reference_Method: Vector
 Point_and_Vector_Object_Information:
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: Entity point
 Point_and_Vector_Object_Count: 128

Spatial_Reference_Information:
 Horizontal_Coordinate_System_Definition:
 Planar:
 Grid_Coordinate_System:
 Grid_Coordinate_System_Name: Universal Transverse Mercator
 Universal_Transverse_Mercator:
 UTM_Zone_Number: 11
 Transverse_Mercator:
 Scale_Factor_at_Central_Meridian: 0.9996
 Longitude_of_Central_Meridian: -177.0000000001
 Latitude_of_Projection_Origin: 0
 False_Easting: 500000
 False_Northing: 0

 Planar_Coordinate_Information:
 Planar_Coordinate_Encoding_Method: row and column
 Coordinate_Representation:
 Abscissa_Resolution: 1
 Ordinate_Resolution: 1
 Planar_Distance_Units: m

 Geodetic_Model:
 Horizontal_Datum_Name: North American Datum of 1927
 Ellipsoid_Name: Clarke 1866
 Semi-major_Axis: 6378206
 Denominator_of_Flattening_Ratio: 294.9786982

Entity_and_Attribute_Information:
 Detailed_Description:
 Entity_Type:
 Entity_Type_Label: mrds.dbf
 Entity_Type_Definition: Shapefile attribute table
 Entity_Type_Definition_Source: MRDS,1995

 Attribute:
 Attribute_Label: FID
 Attribute_Definition: Feature ID
 Attribute_Definition_Source: Computed

Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Sequential unique positive integer
Enumerated_Domain_Value_Definition_Source: Computed

Attribute:
Attribute_Label: Shape
Attribute_Definition: Point

Attribute:
Attribute_Label: AREA

Attribute:
Attribute_Label: PERIMETER

Attribute:
Attribute_Label: MRDS_CRYPT#
Attribute_Definition: Internal ID
Attribute_Definition_Source: Computed
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Sequential unique positive integer
Enumerated_Domain_Value_Definition_Source: Computed

Attribute:
Attribute_Label: MRDS_CRYPT-ID
Attribute_Definition: Internal ID
Attribute_Definition_Source: Computed
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Sequential unique positive integer
Enumerated_Domain_Value_Definition_Source: Computed

Attribute:
Attribute_Label: RECORD_NO
Attribute_Definition: MRDS record number
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REPORTER
Attribute_Definition: Reporter name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REP_DATE
Attribute_Definition: Report date
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Numerical
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REP_AFFIL
Attribute_Definition: Reporter affiliation

Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: UPDATER
Attribute_Definition: Updater
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: UPD_DATE
Attribute_Definition: Update date
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Numerical
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: UPD_AFFIL
Attribute_Definition: Updater affiliation
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: SITE
Attribute_Definition: Site name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: SYNONYM
Attribute_Definition: Synonym site name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: DISTRICT
Attribute_Definition: Mining district name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:

Attribute_Label: REC_TYPE
Attribute_Definition: Record type
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: None
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: COUNTY
Attribute_Definition: County name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: STATE_CODE
Attribute_Definition: State abbreviation
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: COUNTRY_CD
Attribute_Definition: Country abbreviation
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: QUAD
Attribute_Definition: Quadrangle name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: QUAD1
Attribute_Definition: Quadrangle name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: LATITUDE
Attribute_Definition: Latitude
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric

Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: LONGITUDE
Attribute_Definition: Longitude
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: COMMODS
Attribute_Definition: Commodity
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: PROD
Attribute_Definition: Production description
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: STATUS
Attribute_Definition: Status of site
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: OWNER
Attribute_Definition: Owner name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: OPERATOR
Attribute_Definition: Operator name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: DEP_TYPE
Attribute_Definition: Deposit type
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: DEP_FORM
Attribute_Definition: Deposit form
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: DEP_SIZE
Attribute_Definition: Deposit size
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: SURF_UNDG
Attribute_Definition: Surface or underground
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: HR_TYPE
Attribute_Definition: Host rock type
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: HR_AGE
Attribute_Definition: Host rock age
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: AGE_OF_MIN
Attribute_Definition: Age of mineralization
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: IG_RK_TYPE
Attribute_Definition: Igneous rock type

Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: IG_RK_AGE
Attribute_Definition: Igneous rock age
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: ORE_CTRL
Attribute_Definition: Ore control
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: TECTONICS
Attribute_Definition: Tectonics
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: ALTERATION
Attribute_Definition: Alteration
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: CONCENTRAT
Attribute_Definition: Concentration
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: ORE_MINS
Attribute_Definition: Ore Minerals
Attribute_Definition_Source: MRDS, 1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:

Attribute_Label: NONORE_MIN
Attribute_Definition: Non-ore minerals
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: COMMENTS
Attribute_Definition: Comments
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: PROD1
Attribute_Definition: Production
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: PROD2
Attribute_Definition: Production
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: PROD3
Attribute_Definition: Production
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: CUM_PROD1
Attribute_Definition: Cumulative production
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: CUM_PROD2
Attribute_Definition: Cumulative production
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric

Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: CUM_PROD3
Attribute_Definition: Cumulative production
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: PR_COMMENT
Attribute_Definition: Production comments
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: RESERVES1
Attribute_Definition: Reserves
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: RESERVES2
Attribute_Definition: Reserves
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: RESERVES3
Attribute_Definition: Reserves
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: RESV_COM
Attribute_Definition: Reserves Comments
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995
Attribute:
Attribute_Label: REF1
Attribute_Definition: Reference
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:

Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REF2
Attribute_Definition: Reference
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REF3
Attribute_Definition: Reference
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REF4
Attribute_Definition: Reference
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: REF5
Attribute_Definition: Reference
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: STATE_NAME
Attribute_Definition: State name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: COUNTRY_NM
Attribute_Definition: Country Name
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: MODEL_NAME
Attribute_Definition: USGS Model name

Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: MODEL_NUM
Attribute_Definition: USGS Model number
Attribute_Definition_Source: MRDS,1995
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Alpha-numeric
Enumerated_Domain_Value_Definition_Source: MRDS,1995

Attribute:
Attribute_Label: TYPE
Attribute_Definition: Cryptocrystalline type
Attribute_Definition_Source: User-assigned field
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition: chalcedony
Enumerated_Domain_Value_Definition_Source: User-assigned
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition: chert
Enumerated_Domain_Value_Definition_Source: User-assigned
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition: jasper
Enumerated_Domain_Value_Definition_Source: User-assigned
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition: opal
Enumerated_Domain_Value_Definition_Source: User-assigned
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition: silica
Enumerated_Domain_Value_Definition_Source: User-assigned

Overview_Description:

Entity_and_Attribute_Overview: For more attribute information on the MRDS data base refer to the MRDS metadata on the FGDC Clearinghouse for the CD-ROM version of MRDS produced by the U.S. Geological Survey as DDS-20 in 1996.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Person_Primary:

Contact_Organization: U.S. Geological Survey, Information Services, Denver.

Contact_Address:

Address_Type: mailing and physical address

Address: Open-File Reports, Box 25286

City: Denver

State_or_Province: Colorado

Postal_Code: 80225

Country: USA

Contact_Voice_Telephone: 303-202-4200
Contact_Facsimile_Telephone: 303-202-4695
Resource_Description: OF 99-523
Distribution_Liability: No warranty, expressed or implied, is made by the USGS as to the accuracy of the data. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the USGS in the use of these data, software, or related materials.
Standard_Order_Process:
Digital_Form:
Digital_Transfer_Information:
Format_Name: SHP
File-Decompression_Technique: No compression applied
Transfer_Size: 0.522 MB
Digital_Transfer_Option:
Online_Option:
Computer_Contact_Information:
Network_Address:
Network_Resource_Name: URL=<http://geopubs.wr.usgs.gov/open-file/of99-523>
Fees: Subject to change
Custom_Order_Process: The Preliminary digital map of cryptocrystalline occurrences in northern Nevada and data are available from the WWW in ArcView shapefile format with associated files. URL is <http://geopubs.wr.usgs.gov/openfile/of99-523/index.html> FTP is <ftp://geopubs.wr.usgs.gov/pub/openfile/of99-523>
Available_Time_Period:
Time_Period_Information:
Single_Date/Time:
Metadata_Reference_Information:
Metadata_Date: 20000622
Metadata_Review_Date: 19990430
Metadata_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Lorre A. Moyer
Contact_Organization: U.S. Geological Survey, Reno Field Office
Contact_Position: Geologist
Contact_Address:
Address_Type: mailing and physical address
Address: USGS C/O Mackay School of Mines MS 176, University of Nevada
City: Reno
State_or_Province: Nevada
Postal_Code: 89557
Country: USA
Contact_Voice_Telephone: 775-784-5552
Contact_Facsimile_Telephone: 775-784-5079
Contact_Electronic_Mail_Address: lorre@usgs.gov
Hours_of_Service: 800-1600 PT
Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Time_Convention: local time
Metadata_Access_Constraints: none
Metadata_Use_Constraints: none
Metadata_Security_Information:
Metadata_Security_Classification_System: none
Metadata_Security_Classification: Unclassified
Metadata_Security_Handling_Description: none

Metadata_Extensions:

Online_Linkage: <http://www.esri.com/metadata/esriprof80.html>

Profile_Name: ESRI Metadata Profile

Appendix D – Metadata for RKHND GIS (rkhnd.met)

Identification_Information:

Citation:

Citation_Information:

Originator: Moyer, Lorre A.

Publication_Date: 1999

Title: rkhnd (ArcView shapefile), rkhnd_crypto (ArcInfo point coverage)

Geospatial_Data_Presentation_Form: Digital

Series_Information:

Series_Name: Open File

Issue_Identification: 99-523

Publication_Information:

Publication_Place: Spokane, Washington

Publisher: U.S. Geological Survey

Online_Linkage:

<http://geopubs.wr.usgs.gov/open-file/of99-523>

<ftp://geopubs.wr.usgs.gov/pub/openfile/of99-523>

Larger_Work_Citation:

Citation_Information:

Title: Moyer, L. A., 1999, Preliminary digital map of cryptocrystalline occurrences in northern Nevada: U.S. Geological Survey Open-File Report 99-523, 38p.

Description:

Abstract:

A polygon Arcview shapefile of northern Nevada cryptocrystalline occurrences derived from Nevada rockhound guides and converted to a coverage.

Purpose:

The polygon shapefile was combined with a point shapefile derived from the U.S. Geological Survey's Mineral Resources Data System (MRDS) to create a preliminary digital map of cryptocrystalline occurrences of northern Nevada. The original intent was to identify potential sources of raw materials for tools used by indigenous people of northern Nevada. The dataset was created to assist government agencies and others in making resource management decisions using geographic information systems (GIS). Uses of the spatial data set include, but are not limited to, natural and cultural resource management, interdisciplinary activities, recreational rockhounding, and gold exploration.

Supplemental_Information:

The primary focus was potential raw material sites for tools made by native northern Nevadans. Archaeologists routinely rely on pottery and projectile points for dating techniques. Since basketry was more

appropriate for the nomadic lifestyle of the native northern Nevadans, the major dating device for the Great Basin archaeological sites has been the projectile point. Preliminary investigation of the types of raw materials used for tool making by indigenous people of Northern Nevada led to decisions regarding the kind of occurrences considered to be cryptocrystalline for this spatial data set. The rockhound sites were descriptive and not based in a coordinate system. The ArcView distance-measuring tool was used to locate the sites in creating the ArcView 3.0 polygon theme, rkhnd.shp. Eighty-two cryptocrystalline sites were spatially referenced using Nevada 1:100,000 scale digital raster graphic (DRG) maps in UTM projection as background images (Nevada Bureau of Mines and Geology, 1996). Sites were located by measuring described distances and directions along roads and marking with polygon shapes. The size of the polygon represents the distributed or scattered area of the cryptocrystalline material, not the amount of material. The smooth, symmetrical (rather than irregular) shape of the polygon reflects the lack of point-to-point accuracy resulting from the location descriptions. A REFERENCE field numerically codes location accuracy in the polygon theme table, rkhnd.dbf. The polygon TYPE field categorizes the cryptocrystalline material for each rockhound site, and attribute color-coding corresponds to the TYPE field in the point theme table. A MRDS point theme and rockhound polygon theme were combined with an ARC/INFO coverage of Nevada county boundaries and an ArcView 3.0 layout was designed at 1:750,000 scale in UTM Zone 11 map projection. An additional ARC/INFO coverage of northern Nevada roads was used to create the digital preliminary map of northern Nevada cryptocrystalline occurrences.

Time_Period_of_Content:

Time_Period_Information:

Multiple_Dates/Times:

Single_Date/Time:

Calendar_Date: 1975

Single_Date/Time:

Calendar_Date: 1983

Single_Date/Time:

Calendar_Date: 1989

Single_Date/Time:

Calendar_Date: 1991

Currentness_Reference: Publication dates of rockhound guide sources

Status:

Progress: Complete

Maintenance_and_Update_Frequency: Unknown

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -120.0252

East_Bounding_Coordinate: -114.4140

North_Bounding_Coordinate: 41.9792

South_Bounding_Coordinate: 39.0080

Keywords:

Theme:

Theme_Keyword_Thesaurus: None

Theme_Keyword: chalcedony

Theme_Keyword: opal

Theme_Keyword: jasper

Theme_Keyword: chert

Theme_Keyword: obsidian

Theme_Keyword: cutting material

Place:

Place_Keyword_Thesaurus: None

Place_Keyword: northern Nevada

Access_Constraints: None

Use_Constraints:

For use at 1:750,000 scale. Spatial data accuracy varies greatly due to data sources, and reliance on descriptive information rather than coordinate locations in rockhound guides. For some purposes a field check may be advisable.

Point_of_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: U.S. Geological Survey, Reno Field Office

Contact_Person: Lorre A. Moyer

Contact_Position: Geologist

Contact_Address:

Address_Type: mailing and physical address

Address: USGS C/O Mackay School of Mines MS-176, University of Nevada

City: Reno

State_or_Province: Nevada

Postal_Code: 89557

Country: USA

Contact_Voice_Telephone: 775-784-5552

Contact_Facsimile_Telephone: 775-784-5079

Contact_Electronic_Mail_Address: lorre@usgs.gov

Hours_of_Service: 800-1600 PT

Data_Set_Credit: Katherine Connors and Gary Raines of the USGS, and Ron Hess of the Nevada Bureau of Mines and Geology assisted in the direction and creation of this data set.

Security_Information:

Security_Classification_System: None

Security_Classification: Unclassified

Security_Handling_Description: None

Native_Data_Set_Environment: ArcView version 3.1 shapefile format

Cross_Reference:

Citation_Information:

Originator: Moyer, L.A.

Publication_Date: 1999

Title: Preliminary digital map of cryptocrystalline occurrences in northern Nevada

Series_Information:

Series_Name: Open-File Report

Issue_Identification: 99-523

Publication_Information:

Publication_Place: Reno, Nevada

Publisher: U.S. Geological Survey

Online_Linkage:

<http://geopubs.wr.usgs.gov/open-file/of99-523>
<ftp://geopubs.wr.usgs.gov/pub/openfile/of99-523>

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Data accuracy varies greatly due to data sources, and reliance on descriptive information in rockhound guides (rather than coordinate locations). For some purposes a field check may be advisable. All attributes created were verified by display in the spatial database, but no formal tests were performed.

Logical_Consistency_Report:

These data are believed to be logically consistent, although no formal tests were performed.

Completeness_Report:

The area of interest was within the northern Nevada state boundary and bounded in the south by 39 degrees north latitude. The cryptocrystalline materials considered were chalcedony, chert, jasper, opal, obsidian, and cutting materials.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

No tests or field checks were performed, and accuracy varies according to description accuracy in the rockhound guides. Polygon size represents the distribution not quantity of the cryptocrystalline material. The smooth polygon shape reflects the lack of point to point accuracy resulting from the location descriptions.

Vertical_Positional_Accuracy:

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: Johnson, Robert Neil

Publication_Date: 1978

Title: Nevada Utah Gem Atlas

Edition: 3rd

Geospatial_Data_Presentation_Form: location description

Publication_Information:

Publication_Place: Susanville, California

Publisher: Cy Johnson and Son

Type_of_Source_Media: paper

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 1978

Source_Currentness_Reference: publication date

Source_Citation_Abbreviation: Johnson, 1978

Source_Contribution: site location descriptions

Source_Information:

Source_Citation:

Citation_Information:

Originator: Klein, James

Publication_Date: 1983
Title: Where to Find Gold and Gems in Nevada
Edition: none
Geospatial_Data_Presentation_Form: location description
Publication_Information:
 Publication_Place: Pico Rivera, California
 Publisher: Gem Guides Book Co.
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
 Time_Period_Information:
 Single_Date/Time:
 Calendar_Date: 1983
 Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: Klein, 1983
Source_Contribution: site location descriptions
Source_Information:
Source_Citation:
 Citation_Information:
 Originator: Mitchell, James R.
 Publication_Date: 1991
 Title: Gem Trails of Nevada
 Edition: none
 Geospatial_Data_Presentation_Form: location description
 Publication_Information:
 Publication_Place: Baldwin Park, California
 Publisher: Gem Guides Book Co.
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
 Time_Period_Information:
 Single_Date/Time:
 Calendar_Date: 1991
 Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: Mitchell, 1991
Source_Contribution: site location descriptions
Source_Information:
Source_Citation:
 Citation_Information:
 Originator: J.B. Murphy
 Publication_Date: 1975
 Title: Rockhound's Map of Nevada
 Edition: none
 Geospatial_Data_Presentation_Form: map
 Series_Information:
 Series_Name: Special Publication
 Issue_Identification: 1
 Publication_Information:
 Publication_Place: Nevada
 Publisher: Nevada Bureau of Mines and Geology
 Other_Citation_Details: Special Publication 1
Source_Scale_Denominator: 100,000
Type_of_Source_Media: paper map
Source_Time_Period_of_Content:
 Time_Period_Information:
 Single_Date/Time:

Calendar_Date: 1975
 Source_Currentness_Reference: publication date
 Source_Citation_Abbreviation: Murphy,1975
 Source_Contribution: site locations
 Process_Step:
 Process_Description:
 The original rockhound descriptions were used to locate sites using the ArcView distance measuring tool in an ArcView polygon theme, rkhnd.shp. The Nevada 1:100,000 scale digital raster graphic (DRG) maps were used as a spatial reference.
 Source_Used_Citation_Abbreviation: User-defined
 Process_Date: 1999
 Source_Produced_Citation_Abbreviation: Moyer, 1999
 Process_Contact:
 Contact_Information:
 Contact_Person_Primary:
 Contact_Person: Lorre A. Moyer
 Contact_Organization: U.S. Geological Survey, Reno Field Office
 Contact_Position: Geologist
 Contact_Address:
 Address_Type: mailing and physical address
 Address: USGS C/O Mackay School of Mines MS-176, University of Nevada
 City: Reno
 State_or_Province: Nevada
 Postal_Code: 89557
 Country: USA
 Contact_Voice_Telephone: 775-784-5552
 Contact_Facsimile_Telephone: 775-784-5079
 Contact_Electronic_Mail_Address: lorre@usgs.gov
 Hours_of_Service: 800 -1600 PT
 Spatial_Data_Organization_Information:
 Direct_Spatial_Reference_Method: Vector
 Point_and_Vector_Object_Information:
 SDTS_Terms_Description:
 SDTS_Point_and_Vector_Object_Type: GT-polygon composed of chains
 Point_and_Vector_Object_Count: 82
 Spatial_Reference_Information:
 Horizontal_Coordinate_System_Definition:
 Planar:
 Grid_Coordinate_System:
 Grid_Coordinate_System_Name: Universal Transverse Mercator
 Universal_Transverse_Mercator:
 UTM_Zone_Number: 11
 Transverse_Mercator:
 Scale_Factor_at_Central_Meridian: 0.999600
 Longitude_of_Central_Meridian: -117.000000
 Latitude_of_Projection_Origin: 0.000000
 False_Easting: 500000.000000
 False_Northing: 0.000000
 Planar_Coordinate_Information:
 Planar_Coordinate_Encoding_Method: row and column
 Coordinate_Representation:
 Abscissa_Resolution: 200

Ordinate_Resolution: 200
 Planar_Distance_Units: Meters
 Geodetic_Model:
 Horizontal_Datum_Name: North American Datum of 1927
 Ellipsoid_Name: Clarke 1866
 Semi-major_Axis: 6378206.4000000
 Denominator_of_Flattening_Ratio: 294.98
 Vertical_Coordinate_System_Definition:
 Altitude_System_Definition:
 Altitude_Datum_Name: National Geodetic Vertical Datum of 1929
 Altitude-Encoding_Method: Implicit coordinate
 Depth_System_Definition:
 Entity_and_Attribute_Information:
 Detailed_Description:
 Entity_Type:
 Entity_Type_Label: rkhnd.dbf
 Entity_Type_Definition: Shapefile attribute table
 Entity_Type_Definition_Source: User-defined
 Attribute:
 Attribute_Label: FID
 Attribute_Definition: Feature ID
 Attribute_Definition_Source: Computed
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: Sequential unique positive integer
 Enumerated_Domain_Value_Definition_Source: Computed
 Attribute:
 Attribute_Label: Shape
 Attribute_Definition: Polygon
 Attribute_Definition_Source: Computed
 Attribute:
 Attribute_Label: ID
 Attribute_Definition: User-assigned feature number
 Attribute_Definition_Source: User-defined
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: Integer
 Enumerated_Domain_Value_Definition_Source: User-defined
 Attribute:
 Attribute_Label: TYPE
 Attribute_Definition: Cryptocrystalline occurrence type
 Attribute_Definition_Source: User-defined
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: chalcedony
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: cutting material
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: jasper

Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: obsidian
 Enumerated_Domain_Value_Definition_Source: Nevada rockhound guides
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: opal
 Enumerated_Domain_Value_Definition_Source: User-defined
 Attribute:
 Attribute_Label: SUBTYPE
 Attribute_Definition: Cryptocrystalline occurrence subtype
 Attribute_Definition_Source: Nevada rockound guides
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: agate
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: Apache tears
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: onyx
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: chalcedony
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: chert
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: cinnabar
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: fire opal
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: jasper
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: obsidian
 Enumerated_Domain_Value_Definition_Source: User-defined
 Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: opal
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: opalite
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: petrified wood
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: precious opal
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Character
 Enumerated_Domain_Value_Definition: wood (petrified wood)
 Enumerated_Domain_Value_Definition_Source: User-defined

Attribute:
 Attribute_Label: LOCATION
 Attribute_Definition: Location accuracy estimation
 Attribute_Definition_Source: User-defined
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: Numeric Code
 Enumerated_Domain_Value_Definition: 1 = reasonably accurate
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Numeric code
 Enumerated_Domain_Value_Definition: 2 = general area
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Numeric code
 Enumerated_Domain_Value_Definition: 3 = vague
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Numeric code
 Enumerated_Domain_Value_Definition: 4 = inaccurate
 Enumerated_Domain_Value_Definition_Source: User-defined

Attribute:
 Attribute_Label: REFERENCE
 Attribute_Definition: Sources for rockhound site locations
 Attribute_Definition_Source: User-defined
 Attribute_Domain_Values:
 Enumerated_Domain:
 Enumerated_Domain_Value: Numeric code
 Enumerated_Domain_Value_Definition: 1 = Rockhound's Map of Nevada (Murphy,1975)
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Numeric code
 Enumerated_Domain_Value_Definition: 2 = Gem Trails of Nevada (Mitchell,1991)
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
 Enumerated_Domain_Value: Numeric code
 Enumerated_Domain_Value_Definition: 3 = Nevada-Utah Gem Atlas (Johnson,1989)
 Enumerated_Domain_Value_Definition_Source: User-defined

Enumerated_Domain:
Enumerated_Domain_Value: Numeric code
Enumerated_Domain_Value_Definition: 4 = Where to Find Gold and Gems in Nevada (Klien,1983)
Enumerated_Domain_Value_Definition_Source: User-defined

Attribute:

Attribute_Label: SITE_NAME
Attribute_Definition: Site name
Attribute_Definition_Source: User-defined
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: User-defined

Attribute:

Attribute_Label: QUADRANGLE
Attribute_Definition: 100k quadrangle map name
Attribute_Definition_Source: NBMG, 1996, Nevada DRG maps on CD-ROM
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: Character
Enumerated_Domain_Value_Definition_Source: NBMG, 1996, Nevada DRG maps on CD-ROM

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:
Contact_Organization: U.S. Geological Survey, Information Services, Denver.
Contact_Address:
Address_Type: mailing and physical address
Address: Open-File Reports, Box 25286
City: Denver
State_or_Province: Colorado
Postal_Code: 80225
Country: USA
Contact_Voice_Telephone: 303-202-4200
Contact_Facsimile_Telephone: 303-202-4695

Resource_Description: USGS OFR99-523

Distribution_Liability:

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Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: SHP
File-Decompression_Technique: No compression applied
Transfer_Size: 0.479 MB

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: <http://geopubs.wr.usgs.gov/open-file/of99-523>

Fees: Subject to change

Custom_Order_Process:

The Preliminary digital map of cryptocrystalline

occurrences in northern Nevada and data are available from the WWW in ArcView shapefile format with associated files.
URL is <http://geopubs.wr.usgs.gov/open-file/of99-523/index.html>
FTP is <ftp://geopubs.wr.usgs.gov/pub/open-file/of99-523>

Metadata_Reference_Information:

Metadata_Date: 20000622

Metadata_Review_Date: 1999

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: U.S. Geological Survey

Contact_Person: Lorre A. Moyer

Contact_Position: Geologist

Contact_Address:

Address_Type: Mailing and physical address

Address: USGS C/O Mackay School of Mines MS-176, University of Nevada

City: Reno

State_or_Province: Nevada

Postal_Code: 89557

Country: USA

Contact_Voice_Telephone: 775-784-5552

Contact_Facsimile_Telephone: 775-784-5079

Contact_Electronic_Mail_Address: lorre@usgs.gov

Hours_of_Service: 800 - 1600 PT

Metadata_Standard_Name: FGDC CSDGM

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: local time

Metadata_Security_Information:

Metadata_Security_Classification_System: None

Metadata_Security_Classification: Unclassified

Metadata_Security_Handling_Description: None

Metadata_Extensions:

Online_Linkage: <http://www.esri.com/metadata/esriprof80.html>

Profile_Name: ESRI Metadata Profile